Math 3 Review for Cumulative Exam Chapters 6 and 7

1. Find the product
$\frac{x^{2}-4 x-5}{x^{2}+6 x+9} \cdot \frac{2 x^{2}+6 x}{x^{2}+3 x+2}$
2. Find the sum
$\frac{7}{x^{2}-5 x-24}+\frac{3}{x-8}$
3. Find the difference
$\frac{5}{x+1}-\frac{3}{x+2}$
4. Solve the equation
$\frac{3}{x}+\frac{5}{2}=\frac{-12}{x}$
5. Find the quotient

$$
\frac{x^{2}+5 x-14}{x+3} \div\left(x^{2}-4 x+4\right)
$$

4. Find the sum

$$
\frac{14}{x^{2}+7 x-18}+\frac{6}{x+9}
$$

6. Find the difference

$$
\frac{6}{x+4}-\frac{5 x}{x-3}
$$

8. Solve the equation

$$
\frac{5}{x}+\frac{7}{4}=\frac{9}{x}
$$

9. Write a rule for the nth term of the sequence. Then, find the 23 rd term $375,75,15,3, \ldots$
10. Write a rule for the nth term of the sequence. Then, find the 23 rd term $51,48,45,42, \ldots$
11. Find the sums
a.
$\sum_{k=1}^{6}\left(k^{2}-3\right)$
b.
$\sum_{i=1}^{20}(3 i+7)$
c.
$\sum_{n=1}^{\infty} 7\left(\frac{1}{4}\right)^{n-1}$
d. $\sum_{k=1}^{10} 4(3)^{k-1}$.
